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Notice of Allowability

Application No.

10/511,128

Examiner

Rita Leykin

Applicant(s)

TAKENAKA ET AL.

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.
2. ☒ The allowed claim(s) is/are 1-7.
3. ☒ The drawings filed on 13 October 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>10/13/04</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Rita Leykin
RITA LEYKIN Examiner
PRIMARY EXAMINER

Rita Leykin

REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance. The prior art made of record in the attached form PTO-892 considered to be pertinent to the submitted application.

Takenaka et al. US # 5,404,086 disclose a system for controlling locomotion of legged mobile robot and correcting inclinometer's output, wherein a desired walking pattern (gait) is not predetermined. And therefor, the error is estimated and desired walking pattern is corrected in response to the error such that the floor reaction becomes as desired. The floor reaction force is controlled through the angle and desired walking pattern. The error is used to correct output of the inclinometer equipped on robot.

Takenaka et al. US # 5,459,659 disclose an attitude stabilization control system for a legged mobile robot having a trunk and two legs each connected to the trunk such that it walks on the ground. The system generates a desired walking pattern of the robot in such a manner that ground reaction force moment acting on the robot when the robot's leg comes into contact with the ground is at a desired position and is provided with a first model made up of an inverted pendulum and situating dynamics of the robot and a second model simulating the mechanical structure of the robot such that the second model is assumed to walk on the ground in accordance with the desired waking pattern. An inclinatory error of the robot's trunk is detected relative to the second model. A manipulated variable is determined in terms of moment in response to the detected inclinatory error and supplying it to the first model such that the inverted pendulum is

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rotated about its pivot point by an amount corresponding to the manipulated variable. A positional variations corresponding to the trunk is detected resulting from the rotation therefrom, to correct the motion of the second model in response to the detected positional variation. Robot's joints are controlled to follow the motion of the second model, thereby, the robot can move stably over the ground.

However, none of the prior art teaches or suggests the claimed combination of limitations including:

- A drift correction value determining means for determining a drift correction value relative to a detected value of the posture angular velocity detecting means;
- An angular velocity estimated by the slippage free posture angular velocity estimating means;
- Correcting a detected value of the posture angular velocity detecting means by using a drift correction value and a posture angular velocity estimated by the slippage-free posture angular velocity estimating means close to zero.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rita Leykin whose telephone number is (571)272-2066. The examiner can normally be reached on Monday-Friday 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571)272-2107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

R.L.

Rita Leykin
Primary Examiner
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